



State of New Hampshire  
DEPARTMENT OF ENVIRONMENTAL SERVICES

6 Hazen Drive, P.O. Box 95, Concord, NH 03302-0095  
(603) 271-3406 FAX (603) 271-7894



November 18, 2002

**Letter of Deficiency**  
**DAM #232.06**

Ms. Elizabeth Fox  
Town of Swanzey  
P.O. Box 10009  
E. Swanzey, NH 03446

RE Upper Wilson Pond, Swanzey

Dear Ms. Fox:

The Department of Environmental Services, Dam Bureau (DES) consistently strives to enhance the safety of dams in New Hampshire through its dam safety program. One of the many instruments that play a part in reaching this goal is our inspection program. DES is forwarding this correspondence to you to advise you that in accordance with RSA 482:12 and Env-Wr 502.02, an inspection of the subject dam was conducted on September 18, 2002. During this visual inspection and/or file review, the following items were observed:

Items noted in the towns operations and maintenance plan have not been addressed. They include:

- a. The plan states that the grass on the dam and dike will be mowed annually. During the inspection it was noted that the grass cover around the dam is maintained very well, however, the entire 375-foot length of dike is over grown by trees. According to the file these trees were last cut down in 1982;
- b. There is an accumulation of rocks and sediment on the upstream face of the flashboards; The plan indicates that the upstream and downstream channel will be monitored to ensure debris does not clog the channel. There is a 6-8 foot high area of brush growing in the discharge channel between the dam and road culvert;
- d. The plan indicates that logs of monthly inspection will be incorporated into a monthly file, which will be kept at the DPW. DES would like to obtain a copy of these logs;

There are several horizontal and vertical cracks on all of the downstream faces of the concrete walls of the dam. The concrete is in generally poor condition. The right downstream wall has several cracks that extend through the wall with spalling and efflorescence along its entire length;

- 3 The right upstream face of the embankment has a hearty grass cover maintained, however, it is eroded and steep likely due to wave action. Small diameter rip rap has been placed on the upstream face in the past but appears to have been undersized;

There is no low level outlet associated with the dam. According to a 1983 DES memo the requirement for a low level outlet was waived as long as the spillway was lowered by 18 inches;

- 5 The upstream right granite training wall along the approach to the spillway is missing blocks. These blocks were visible within the impoundment adjacent to the wall;

6. There is a ¼ inch wide crack on the dam crest located 3 feet to the right of the spillway;
7. There is minor soil erosion at the end of both the left and right concrete walls located at the downstream end of the spillway;
8. The flashboards planks are out of alignment;
9. There is no flashboard pin design on file;
10. The left embankment has been eroded over the years. There have been attempts in the past to place small diameter rip rap on the upstream face, it appears that the rip rap was undersized for the site conditions. Currently the upstream face is very uneven and the crest of the embankment is approximately 1 foot wide before it transitions to the gently sloping downstream face;

The dike could not be properly inspected due to the heavy tree growth. The Army Corps of Engineers Phase I inspection report indicates that the dike has a crest width of 8 feet;

12. There is concrete deterioration along the downstream face of the spillway at the transition from the horizontal spillway to the vertical downstream face;
13. There was evidence of seepage through the left downstream concrete retaining wall located approximately 15 feet to the left of the spillway; and
14. There are no design or as-built plans on file, which reflect the change in spillway configuration after the 1983 installation of flashboards.

DES believes that the above deficiencies can be corrected by performing the following items by the indicated schedule:

**September 2003:**

Conduct the following maintenance activities as stated in the Towns operations and maintenance plan:

- a. Remove all the trees from the 375 foot long dike and establish a hearty grass cover;
- b. Remove the rocks and debris from the upstream face of the flashboards;
- c. Remove the tree from the discharge channel located between the dam and culvert;
- d. DES would like a copy of all monthly inspections that have been conducted and documented;

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2. Repair all of the spalled concrete on the downstream faces of the concrete walls both along them embankments and spillway;
3. Regrade the upstream right embankment to a minimum slope of 2.5:1 and re-establish a hearty grass cover or install adequately sized rip rap;
4. Repair the right upstream granite block wall at the approach to the spillway;
5. Repair the soil erosion located at the right and left ends of the concrete walls at the downstream end of the spillway;
6. Submit a copy of the flashboard pin design.
7. Repair the left embankment. Repairs should include re-grading the upstream face to a minimum of slope of 2.5:1 and re-establish a hearty grass cover or install adequately sized rip rap. In addition, the crest should be checked and if necessary, repaired to maintain a minimum horizontal width of 8 feet as indicated in the ACOE Ph I report;
8. Repair the concrete at the downstream end of the spillway where the spillway transitions from horizontal to the vertical downstream face;
9. Monitor the left downstream concrete wall for seepage and report the finding to DES for future comparison;
10. Submit a copy of plans from 1983 when the permanent spillway crest was lowered and flashboards were installed;

**On a continuing basis:**

Monitor and document the condition of the ¼ inch crack on the crest of the dam located 3 feet to the right of the spillway; and

12. Monitor and document the left downstream concrete wall for seepage and report the findings to DES for future comparison during scheduled inspections.

Due to the time that has lapsed as well as additional deficiencies observed as a result of the September 18, 2002 inspection, DES will be officially closing out the 2000 LOD. Enclosed is a copy for your reference. It is our hope that the additional deficiencies as well as the outstanding deficiency will be addressed.

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DES is requesting that you complete and submit the attached "Intent to Complete Repairs" form, within 30 days of receipt of this letter, that will provide for correction of the identified deficiencies by the date(s) indicated above. If you believe changes to the items of work or dates are necessary, please make the changes directly on the form and provide a brief explanation. We have enclosed a self addressed stamped envelope for you to return this form.

Our intent in sending you this correspondence is to make you aware of items that DES believes warrant your attention to insure the continued safe operation of your dam. It is our hope that, through the submittal of the attached form and a commitment to keeping a well-maintained dam, you will voluntarily comply with the requested items of work. If we do not receive the intent form or a similarly adequate written reply, we will assume that you are in agreement with our findings and recommendations and DES will carry out follow-up inspections accordingly.

If you have any questions or comments regarding this Letter of Deficiency or would like to be present at future inspections, please contact me at 271-3406, or write to the Water Division at the address listed on the top of the previous page.

Sincerely,  
**COPY**  
Jeffrey M. Blaney  
Dam Safety Engineer

Attachments DB8, DB13, Copy of 2000 LOD  
cc: Gretchen Rule  
Certified # 7000 1670 0000 0586 1063  
JMB/was/h:/safety/wendy/lod/232-06blod.doc



State of New Hampshire  
DEPARTMENT OF ENVIRONMENTAL SERVICES

6 Hazen Drive, P.O. Box 95, Concord, NH 03302-0095

(603) 271-3406 FAX (603) 271-7894

December 11, 2000



Letter of Deficiency

DAM #232.06

Ms. Elizabeth Fox  
Town of Swanzey  
P.O. Box 09  
E. Swanzey, NH 03446

RE: Upper Wilson Pond Dam, Swanzey

Dear Ms. Fox:

The Department of Environmental Services, Dam Bureau (DES) consistently strives to enhance the safety of dams in New Hampshire through its dam safety program. One of the many instruments that plays a part in reaching this goal is our inspection program. DES is forwarding this correspondence to you to advise you that in accordance with RSA 482:12 and Env-Wr 502.02, an inspection of the subject dam was conducted on July 10, 2000. During this visual inspection and/or file review, the following deficiencies were observed:

There was spalling concrete along the entire length and below the spillway slab at the interface between the slab and the vertical downstream concrete face wall. The face of the right concrete cutoff/retaining wall was spalling and cracked along the entire length of the wall. Additionally, there was some spalling concrete, at the crest, where the interface between the left cutoff wall and what appears to be a concrete facing/cap to that wall;

2. There were two sink/erosion holes at the toe of the left embankment;
3. Upon review of the file it was observed that in a September 15, 1993 Letter of Deficiency (LOD) the 375-foot dike on the left side of the dam was to be cleared of trees and brush. Through a file review it was not clear as to if the dike had been cleared of the trees and brush at that time. During this inspection the dike was overgrown with trees and brush along the upstream embankment, crest, and downstream embankment of the dike; and
4. Testing and updating of the emergency action plan was scheduled for November 2000.

DES believes that the above deficiencies can be corrected by performing the following items prior to the indicated date:

**February 1, 2001:**

Update and test the EAP;

**May 1, 2001:**

2. Remove the trees and brush from the entire length of the dike and continue a regular maintenance program as indicated on your operation and maintenance plan;
3. Repair the sink/erosion holes at the toe of the left embankment with properly compacted material and an erosion resistant cover;

September 1, 2001:

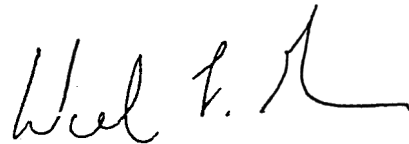
4. Investigate and repair the spalling concrete along the entire length of the spillway slab at the interface between the slab and the vertical downstream face wall; and
5. Seal the cracks along the downstream face of the right cutoff/retaining wall to eliminate further spalling/cracking and seal the intersection, at the crest, between the left cutoff wall and the concrete cap on the face of the wall.

DES is requesting that you complete and submit the attached "Intent to Complete Repairs" form, within 30 days of receipt of this letter, that will provide for correction of the identified deficiencies by the date(s) indicated above. If you believe changes to the items of work or dates are necessary, please make the changes directly on the form and provide a brief explanation. We have enclosed a self addressed stamped envelope for you to return this form.

Our intent in sending you this correspondence is to make you aware of items that DES believes warrant your attention to insure the continued safe operation of your dam. It is our hope that, through the submittal of the attached form and a commitment to keeping a well-maintained dam, you will voluntarily comply with the requested items of work. If we do not receive the intent form or a similarly adequate written reply, we will assume that you are in agreement with our findings and recommendations and DES will carry out follow-up inspections accordingly.

If you have any questions or comments regarding this Letter of Deficiency or would like to be present at future inspections, please contact me at 271-3406, or write to the Water Division at the address listed on the top of the previous page.

Sincerely,



Dale F. Guinn  
Dam Safety Engineer

Attachments DB8, DB13, LOD Dated 9/15/93

cc: Gretchen Rule

Certified # 7099 3400 0002 9772 8533

DFG/was/h:/safety/wendy/loc/232-06lod.doc